

W5YI

National Volunteer Examiner Coordinator

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

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May 15, 1991

HAMVENTION - ALWAYS BIGGER AND BETTER!

The 1991 Dayton Hamvention is now history. It was the fortieth edition and bigger and better than ever ...a good indicator that amateur radio is indeed alive and thriving. The official paid attendance was 32,716 not including several thousand youngsters who were admitted free to introduce them to Amateur Radio. Best guess is that attendance was well over 35,000.

More than \$110,000 in prizes were donated by the amateur industry and awarded to lucky ticket stub holders. There was even a separate prize drawing for the kids who did not have to pay to attend! General Chairman Ross Brown, WA8DQH told us that the HamVention was 12% larger than last year. The annual event is sponsored by the Dayton Amateur Radio Association.

The first HamVention took place in 1951 at the Dayton Biltmore hotel ...breakeven point was pegged at 300 but 600 showed up to inspect the wares of seven exhibitors and attend six forums. A far cry from 1991's three hundred plus exhibitors and fifty-one forums on every subject imaginable.

In 1964 the Hamvention moved to Hara Arena where it has been held ever since. HamVention is easily Dayton's largest convention with every hotel booked up for fifty miles. Most had hospitality rooms sponsored by various members of the amateur radio industry, DX clubs and ham groups.

A new innovation this year were large covered tents for dealers in the huge flea market area. The tent-covered booths catered to dealers who couldn't obtain (or afford) a commercial booth inside the Hara Arena Convention Center. An outdoor covered booth sells for \$190 - about half the cost of indoor display. Regular tail gate flea market spaces go for \$25.00.

The tent concept was very well received and paid off handsomely for the outdoor dealers - especially on Friday when there was a little rain. Everyone dashed to the tents during the drizzle while the rest of the flea marketeers rushed to get their merchandise under cover. The flea market expanse covered about 25 acres - some 2,200 spaces.

Even though there were more flea market tail-gate spaces and indoor commercial displays than ever before, everything was a sell-out. Propelled by the new code-free license class, everyone agreed sales were fantastic! HamVention buses all attendees from local hotels and new this year was an earlier bus schedule.

Thirteen hundred people attended the HamVention Banquet at the downtown Dayton Convention Center on Saturday evening. They heard keynote speaker Astronaut *Tony England, W0ORE*, tell about operating ham radio aboard

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Convention Center on Saturday evening. They heard keynote speaker Astronaut **Tony England**, **WOORE**, tell about operating ham radio aboard the Space Shuttles and the future of the U.S. space program. Dr. England is currently professor of Electrical Engineering and Computer Science at the University of Michigan at Ann Arbor.

Roy Neal, K6DUE interviewed Astronaut Ken Cameron, KB5AWP who has just returned from space aboard STS-37 via phone patch from Houston. An orchestra provided background music while everyone downed their filet mignon.

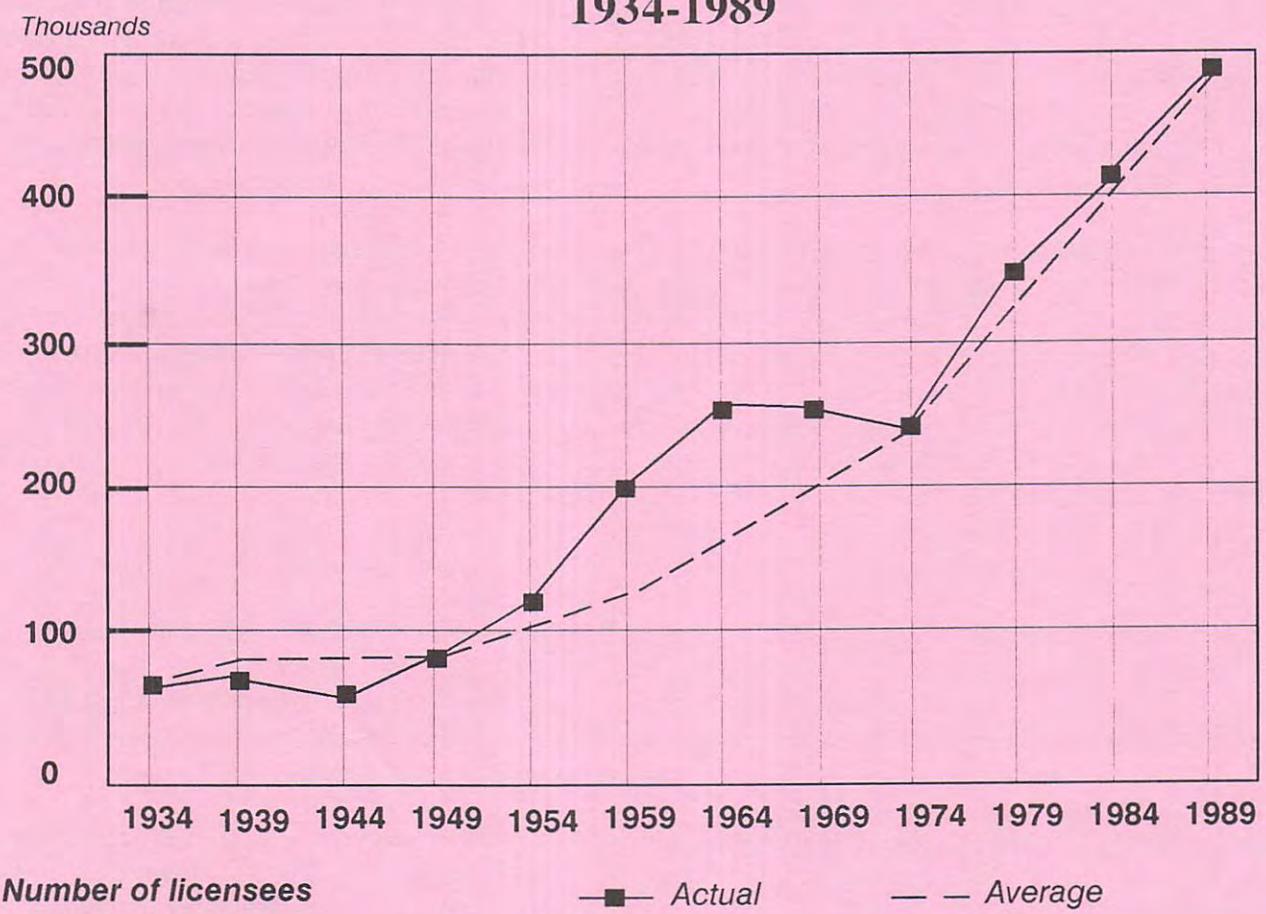
Ohio governor George Voinovich and Dayton mayor Richard Dixon declared April 22-28 as

Amateur Radio Week. Their proclamations recognize ham radio as "...vitally important to all citizens in times of disaster by keeping channels of communications open..."

Amateur of the Year honors went to FCC's ***John B. Johnston, W3BE***, for his two decades of outstanding public service to the amateur community. ***Nate Brightman, K6OSC*** got the Special Achievement Award for his successful efforts in re-establishing a ham station aboard the Queen Mary ocean liner presently a tourist attraction berthed in Long Beach, California. ***Lou McFadin, W5DID*** accepted the Technical Excellence tribute for his developmental work on ham radio hardware used aboard the NASA Space Shuttles.

Amateur Operators

1934-1989



40 Year Growth

Average: 4.46%

**Best: 1977 +40,882
(1990: +6.77%)**

Worst: 1973 -8736

WOULD YOU LIKE TO RECOMMEND A VOLUNTEER EXAMINER? If so, please send a copy of your Extra Class license to the following address:

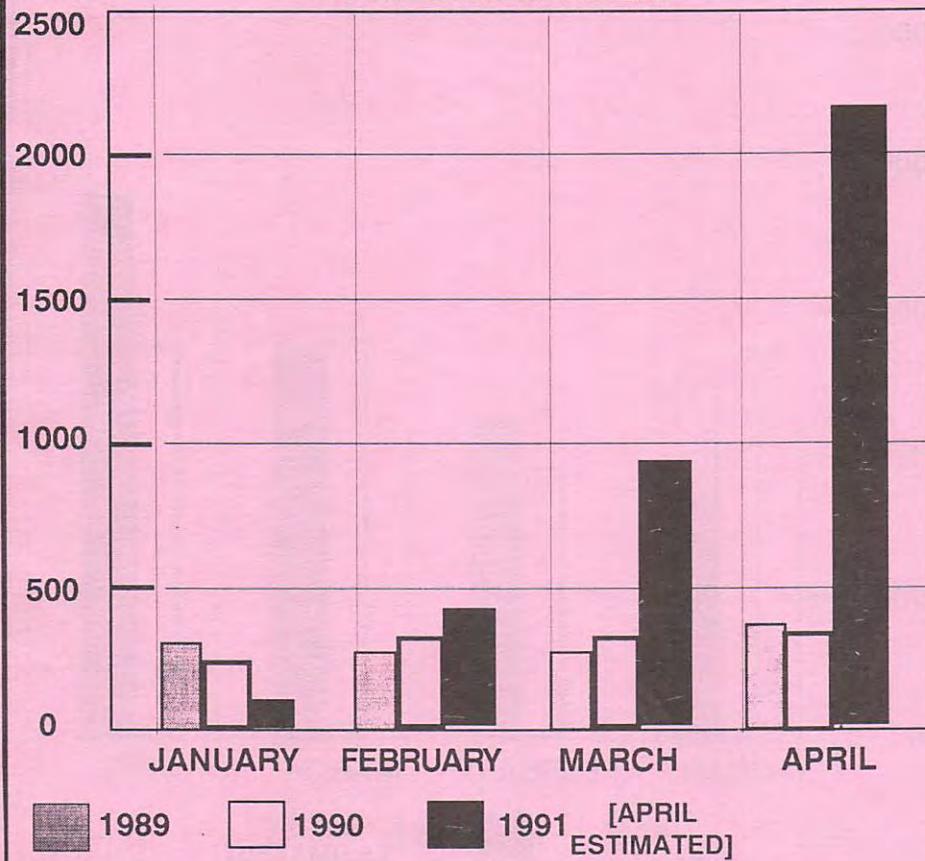
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New Technicians



Attendees at the Amateur Radio Industry Group meeting heard FCC's Johnny Johnston discuss recent licensing statistics and trends. He showed several graphs which indicated the amateur radio hobby was expanding ...aided by the recent code-less Technician license. Some of these charts are depicted here.

They show that amateur radio has been growing at about 4.5% over the last forty years. Also, while the number of new Novice operators is declining somewhat; the increase in the number of entry-level Technician operators is more than making up! The total number of new licensees is also increasing significantly.

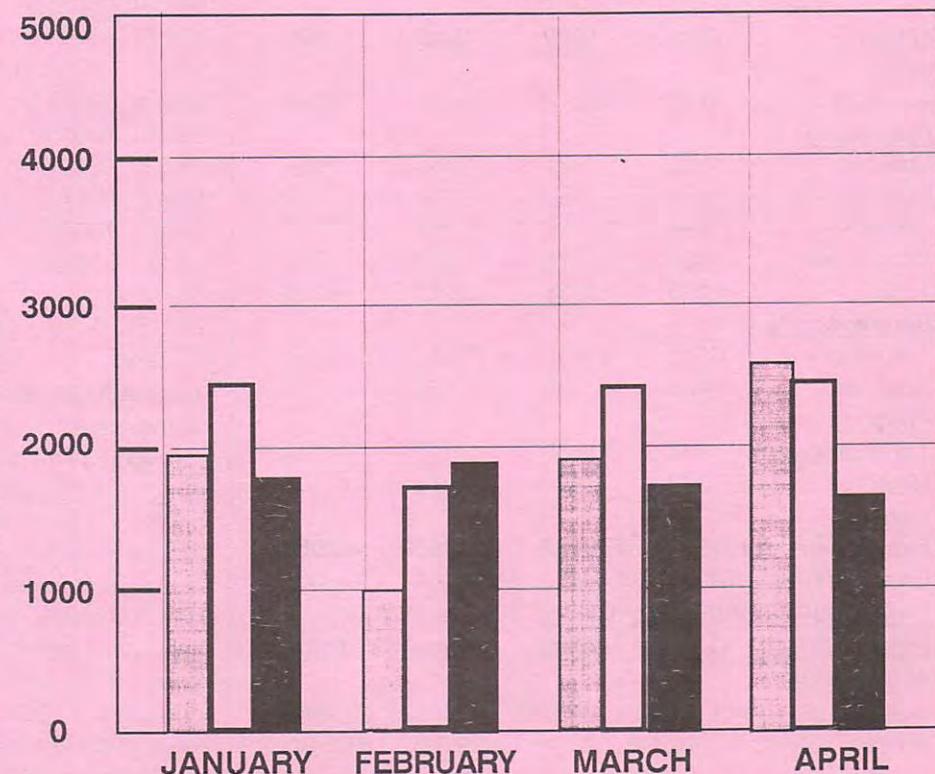
Johnston called the codeless Technician class, "...the QCWA

(Quarter Century Wireless Association) approach." *Harry Dannals, W2HD*, QCWA President, *Lew McCoy, W1ICP* and General Manager *Ted Heithecker, W5EJ* were beaming....having gotten their progressive version of the 'no-code' passed by the FCC.

The R.L. Drake Company was a new Hamvention exhibitor having returned to the ham radio marketplace with a new communications receiver, the R8. Japan's Standard Radio, another new exhibitor, also had a large multi-booth display. They will now sell their radios through a distributor network rather than through Heath who are going out of the amateur equipment business. Bargain hunters were snatching up Heath amateur gear at close-out prices!

Sixty-five applicants qualified for their first amateur license at the

New Novices



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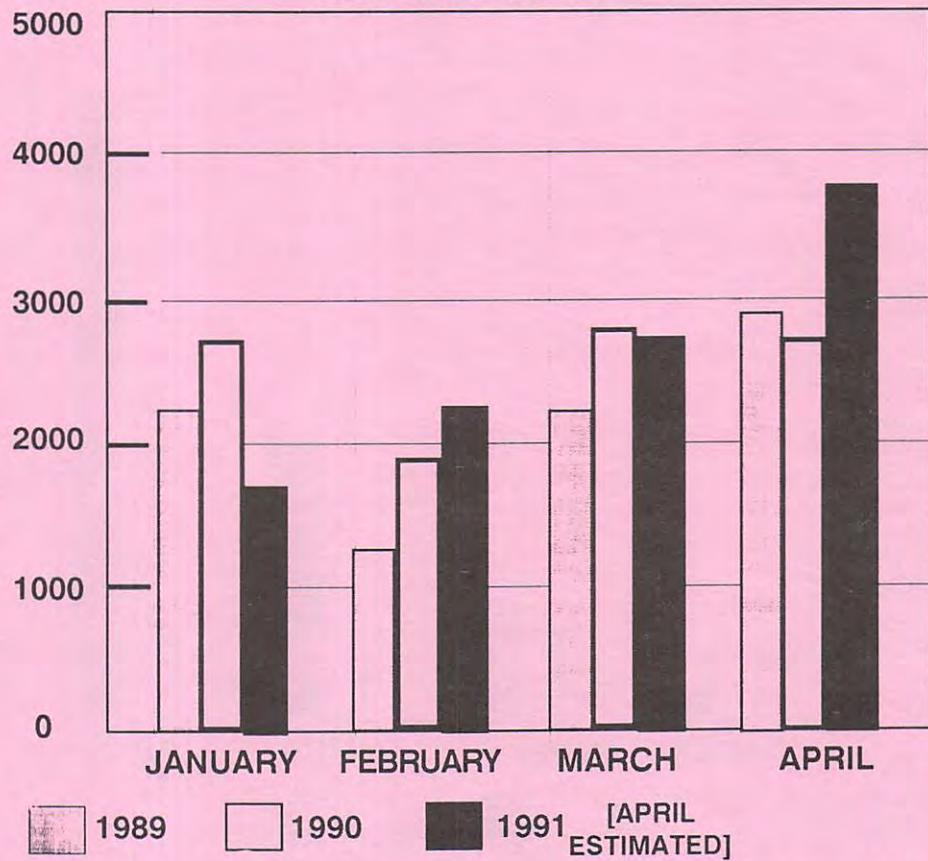
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New Licensees

VEC testing sessions held at Meadowdale High School ...including two that went from nothing to Extra Class in a single sitting. A special prize drawing was held for applicants who succeeded in obtaining their initial amateur license.

An interesting HamVention happening occurred when a gentleman turned in \$1,700 that he found in a folder without any identification of any kind. The money had earlier been reported as lost by a person who had given up all hope of recovery. ICOM awarded the finder a new IC-24 radio for his honesty even though it was not their firm who lost the money. The dealer had already left the HamVention site when the money was recovered and he had to be traced down in Indianapolis.

Next year's Dayton HamVention will be held April 24 to 26, 1992. See you there!



MARCH AMATEUR LICENSING STATISTICS

<u>March</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
New Amateurs:	2733	2219	2505	2748
<u>Upgrading:</u>				
Novices	1636	921	1382	1157
Technicians	632	353	513	524
Generals	486	291	393	317
Advanced	384	173	229	218
<u>Total:</u>	<u>3138</u>	<u>1738</u>	<u>2517</u>	<u>2216</u>
<u>Renewals: (*)</u>				
Total Renew:	6043	* 417	* 142	* 57
Novices	428	60	* 24	* 6
<u>Purged:</u>				
Total Dropped:	946	* 1037	* 20	* 373
Novices	577	460	* 15	* 106
<u>Census:</u>				
Indiv. Oper.	434983	449412	459850	507083
Change/Year	+14291	+14429*	+10438*	+47233*
<u>Individual Operators by Class:</u> (and % of total)				
Extra	Advan.	General	Technic.	Novice
<u>March 1988</u>				
44617	98505	113900	95256	82705
10.3%	22.6%	26.2%	21.9%	19.0%
				100.0%

Extra Advan. General Technic. Novice Total:
March 1989 (*)

47734 99811 114606 105002 82259 449412

10.6% 22.2% 25.5% 23.4% 18.3% 100.0%

March 1990 (*)

49346 100156 114964 112872 82512 459850

10.7% 21.8% 25.0% 24.6% 17.9% 100.0%

March 1991 (*)

54489 105806 120496 130843 95449 507083

10.7% 20.9% 23.8% 25.8% 18.8% 100.0%

Club/ RACES & (1988) (1989) (1990) (1991)

Military: 2379 2475 2449 2432

Total Active: 437362 451887 462299 509515

% Increase +3.3% +3.3% +2.3%* +10.2%*

(*) **NOTE:** The number of amateurs in 1990 and 1991 is not comparable with prior years. Due to the implementation of the 10-year term license in 1984, amateurs who would ordinarily be dropping out of the Amateur Service between 1989 and 1993 by not renewing will be carried on the amateur roles for another five years before being purged from the FCC's data base. This has the effect of overstating the amateur census for 1989 and 1990 since the records of silent keys and non-renewals will not be deleted.

[Source: FCC Licensing Facility, Gettysburg, PA]

The Radio Amateur's LICENSING HANDBOOK is for everyone
who wants to know about amateur radio license tests, amateurs
in every country, and what they can do to help them succeed.
Order from:
NEVII
P.O. Box 12345
Dayton, OH 45412-0001
Phone: (513) 426-2121
Fax: (513) 426-2122
E-mail: nevii@w5yi.com

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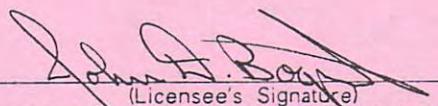
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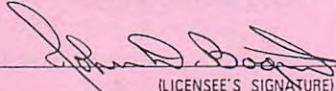
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LICENSEE:

Below are your Amateur Radio Licenses in sizes suitable for your wallet and for framing. Carefully cut the documents along the lines as indicated. Each license carries equal operating authority.

Cut Along This Line			
Here	Call Sign	Effective Date	Expiration Date
THIS LICENSE SUBJECT TO CONDITIONS OF GRANT ON THE REVERSE SIDE. THIS LICENSE IS NOT TRANSFERABLE.	KB5PMC	04/23/91	04/23/01
	Operator Privileges	Station Privileges	
	NOVICE	PRIMARY	
	FIXED STATION OPERATION LOCATION		
JOHN D BOGART 2433 STONECREST DR ABILENE	TX 79606	SAME AS MAILING ADDRESS	
FCC AMATEUR RADIO LICENSE		FCC FORM 660 APRIL 1991	FOLD
 (Licensee's Signature) FEDERAL COMMUNICATIONS COMMISSION			

Cut Along This Line

UNITED STATES OF AMERICA FEDERAL COMMUNICATIONS COMMISSION	
	AMATEUR RADIO LICENSE
KB5PMC	
JOHN D BOGART 2433 STONECREST DR ABILENE TX 79606	
Special Conditions	
Fixed Station Operation Location	
SAME AS MAILING ADDRESS	
Effective Date	Expiration Date
04/23/91	04/23/01
Operator Privileges	Station Privileges
NOVICE	PRIMARY
THIS LICENSE SUBJECT TO CONDITIONS OF GRANT ON THE REVERSE SIDE	
NOT TRANSFERABLE	
 (LICENSEE'S SIGNATURE)	
FCC FORM 660 APRIL 1991	

Cut Along This Line

Cut Along This Line

FCC NOW ISSUING NEW AMATEUR RADIO LICENSE

As of Monday, April 22, the FCC's Gettysburg, Pennsylvania licensing facility is issuing a new laser printed Amateur Radio license to all applicants.

Actually it is two licenses! One (shown here actual size) is pretty much the same layout as before - except it will be much easier to read since it will no longer be printed on carbon paper inside an envelope.

Both licenses are equal - one can be folded in half and carried in a wallet - or laminated. The other license (reduced here to 75% size) is 5"X7" and suitable for framing. We assume that the number (01430) is the sequential license number issued on April 23rd.

01430
We discussed the new license with FCC/Gettysburg's Larry Weikert on April 27th and we were told that amateurs should not arbitrarily request duplicate licenses. They may, however, request a new license if the licensing information has changed (such as a new address, etc.)

The two licenses are printed on one 8-1/2" X 11" (greenish banknote) sheet of paper. The reverse side indicates the Conditions of Grant.

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- The FCC has released a new list of *countries with which the United States has reciprocal amateur radio operating agreements.*

They are: Antigua & Barbuda, Argentina, Australia, Austria, The Bahamas, Barbados, Belgium, Belize, Bolivia, Botswana, Brazil, Canada, (Canadian amateur stations do not need a reciprocal operating permit while operating in the U.S.), Chile, Colombia, Costa Rica, Cyprus, Denmark (including Greenland), Dominica, Dominican Republic, Ecuador, El Salvador, Federated States of Micronesia, Fiji, Finland, France [including French Guiana, French Polynesia (Gambier, Marquesas, Society, Tubuai Islands & Tuamotu Archipelago), Guadeloupe, Ile Amsterdam, Ile Saint-Paul, Iles Crozet, Iles Kerguelen, Martinique, New Caledonia, Reunion, Saint Pierre & Miquelon, and Wallis & Futuna Islands], Federated Republic of Germany, Greece, Grenada, Republic of Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kiribati, Kuwait, Liberia, Luxembourg, Monaco, Netherlands, Netherlands Antilles, New Zealand, Nicaragua, Norway, Panama, Paraguay, Papua New Guinea, Peru, Philippines, Portugal, Seychelles, Sierra Leone, Solomon Islands, Republic of South Africa, Spain, St. Lucia, St. Vincent & Grenadines, Surinam, Sweden, Switzerland, Thailand, Trinidad & Tobago, Tuvalu, United Kingdom (including Bermuda, British Virgin Islands, Cayman Islands, Falkland Islands, Gibraltar, Montserrat, Saint Helena, Turks & Caicos Islands), Uruguay, Venezuela and Yugoslavia.

Aliens must complete FCC Form 610-A (available from FCC, 1270 Fairfield Road, Gettysburg, PA 17326.) Permit is valid for one year. Application and a photocopy of the alien's license must be sent to FCC, P.O. Box 1020, Gettysburg, PA 17326. Operator privileges are those authorized by the alien's own government, but do not exceed those of the FCC Amateur Extra Class operator.

The call sign used by the alien is that issued by the licensing country preceded by the appropriate U.S. geographical letter/-

numerical prefix. Canadian amateur stations must transmit this indicator after its call sign since this is a treaty requirement.

- *Hal Camlin, W3QLP*, and the Baltimore Area Council, Boy Scouts of America, are writing a **Scouting and Exploring Ham Radio Manual**. He would like to hear from you if you have combined Amateur Radio operation with Boy Scout and/or Explorer activities "...such as using QRP rigs on high adventure trips, emergency preparedness events, Controlled Klondike Derbies and Camporees, operated Jamboree-on-the-Air stations, etc." Information and photos go to: *Hal Camlin, W3QLP, BSA Post 73, 7506 Jacquill Road, Glen Burnie, MD 21061-3812.*

- The FCC's **Field Operations Bureau has had a busy first quarter**. So far this year it has shut down **pirate broadcast stations** in Miami (WMAB operated by Archie Bruton on 91.9 MHz FM), and shortwave (7411 kHz KUSA) broadcaster, Domenic R. Bianco of Reedsville, Wisconsin.

In addition, **cable signal leakage enforcement** action has been taken against three cable Systems. Two of these operators were ordered to shut down since they exceeded the **Cumulative Leakage Index (CLI)** designed to prevent potentially harmful interference to aeronautical communications.

Six California and Washington state **fishing boat operators were fined** \$2,000 each for using frequencies reserved for U.S. Government use only.

Madison Communications, Inc., (Huntsville, Alabama) was fined \$52,000 for **operating an unlicensed "wireless cable" system** to approximately 75-80 subscribers.

And a St. Louis rock'n'roll radio station (KSHE-FM) has been fined \$25,000 (the maximum) for **broad-**

casting a mock warning of a nuclear attack during the Persian Gulf war. The FCC said the stunt by morning drive-time disc jockey John Ulett could have caused widespread panic! Ulett used a background tone similar to that of the **Emergency Broadcast System**. He said he was trying to give a lesson to listeners who had been advocating nuking Iraq. He corrected the "misimpression" two hours later.

- The new editor of the **Wireless Bitstream**, newsletter of the **Amateur Radio Interest Group** (Boston Computer Society) is **Charlie Ross, NC1N**. (12 Hemlock Dr., Medway, MA 02053) This group seeks closer ties between personal computing and ham radio. BCS has some 30,000 members!

- **SkyPix Corp. is a new DBS (Direct Television Broadcast Satellite) service** that will be selling their new 80-channel direct-to-home television programming to consumers in an unusual way! Reportedly, they will use a 'pyramid' sales arrangement - each buyer will become a seller to distribute more units. A portion of each hardware (and future PPV programming) sale is returned to those higher up on the pyramid.

- FCC Chairman Al Sikes says he **needs \$133.4 million to fund the agency for Fiscal-1992 and \$163.5 million for 1993**. The Commission wants to add 38 more employees and modernize its 24 year-old computer system and other FCC laboratory equipment. "Some of our equipment is older than the technicians who operate it." Spectrum user fees (including a \$3.00 annual fee from ham operators to be paid on license application or renewal) is to help fund the increase. User fees should bring in an additional \$65 to 70 million.

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- The FCC has denied a request by Janet Whitney of Alexandria, Virginia, to increase the 10 meter privileges accorded Novice and Technician Class operators. Ms. Whitney argued that additional 10 meter frequency privileges would relieve congestion and would aid in recruiting more amateur licensees.

Special Services Chief, Robert H. McNamara, stated the Rules "...are designed to encourage and improve the service by providing for advancing skills in both the technical and communications phases of the radio art. Additional frequency privileges represent a significant part of the incentives that the Commission's Rules offer licensees to upgrade to a higher license class, thereby demonstrating that the licensees have advanced their skill in the radio art." In denying and dismissing the request, McNamara said that the FCC has previously considered the matter of suitable Novice and Technician HF privileges.

FCC PRESENTER CONTRASTS HAM, CELLULAR

The FCC heard from a variety of star witnesses at an unprecedented hearing on *Networks of the Future*, held on May 1 in Washington. Representatives from academia and industry presented their views of future communications developments and policy issues.

Economics commentator George Gilder, author of *Microcosm and Life After Television*, told the Commission that wired communication systems like the telephone are increasingly taking to the airwaves while traditional spectrum-using system such as television are more efficiently provided over cable or fiber optics.

Michael Liebhold of Apple Computer urged the FCC to adopt a high-definition TV standard that takes into account the latest computer video developments and two-way transmission. And Mitchell Kapor, founder of Lotus and designer of Lotus 1-2-3, emphasized the need for the FCC to protect and nurture new technologies and the new kinds of public networks that will grow out of today's computer conferencing systems and BBSs.

Professor Eli Noam of Columbia University displayed a cellular phone and a VHF amateur transceiver. Describing the inflexibility of some FCC rules, Noam said: "What if someone paid me to

sing into both radios, the songs *Happy Days are Here Again* and *There's No Business Like Show Business*. Now with this device, a cellular radio, it would be perfectly legal since it operates as a common carrier. With the other device, which is not a common carrier but a private one, in this case a ham radio, I would violate at least nine FCC regulations: No music; no business talk; no commercial transactions; no third-party traffic; no paid service; no swear words; no unlicensed operation; station identification required, etcetera, etcetera.

"For this, different rules apply to different segments of the communications system. But as they draw together and interconnect in a network of networks, these differing rules become impossible to reconcile. If a common carrier interconnects with a private carrier, which rules govern? ...Common carriage is the practical analog to the First Amendment protections of private speech over privately-owned networks. Common carriage means nondiscriminatory service, neutral as to content, users and uses. In other words, all electrons and protons are created equal. First Amendment protection from government restriction on common carriage is the foundation of free speech in the electronic age."

(Of course, third-party communications are permitted in the Amateur Service under some conditions. But Dr. Noam is right that paid musical performance isn't allowed.)

NEW HAM'S SCANNER CONFISCATED

In researching the FCC Scanner Inquiry file we came across comments by James McCoy/WOLQV describing the confiscation of a scanner by local police. We telephoned McCoy who referred us to the individual who experienced this unfortunate incident.

Background

As we previously reported, the FCC in PR Docket 91-36 is studying whether to pre-empt local and state laws that forbid possession of radio equipment capable of receiving public safety bands (police, sheriff, fire, EMS etc.) The inquiry was prompted by a request from the ARRL. Reports indicate that some hams who own scanners

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or extended-band reception amateur gear have been harassed by local authorities.

The FCC could, if it desires, pre-empt and nullify the local laws if it finds that they preclude normal amateur activities. The FCC could preempt only for licensed amateurs, or for all citizens. But it proposed only to pre-empt the laws for amateur licensees. There is lots of confusion and rumor surrounding the inquiry. Many have telephoned the FCC to find out about its scanner proposals, only to be told that the inquiry is limited to amateur transceivers only.

In fact, however, FCC Commissioner Sherrie Marshall announced February 13 that the Commission wants input from manufacturers of scanners. The agency wants to know how feasible it is to modify existing scanners and/or amateur transceivers to remove any capability to receive public-safety bands. The FCC also wants information on cost and feasibility of manufacturing new equipment that does not cover these bands.

As outlandish as the idea of forced modification may seem, at least the FCC has not proposed to immediately seize scanners or out-of-band amateur equipment as some rumors allege.

(Comments on PR Docket 91-36 are due June 7, 1991 and reply comments July 8, 1991. You should submit a signed original and five copies, unless you want each Commissioner to have a copy in which case you should send an original and nine copies. All comments go to the Office of the Secretary, Federal Communications Commission, 1919 M St. N.W., Washington DC 20554.)

The Kansas case

Christian Stamm of Overland Park, KS is a community college student and a new Technician class ham (no call yet). He is an active Red Cross disaster team volunteer with the Shawnee Mission Branch of the Red Cross. His mother is also a Red Cross volunteer, currently assigned to Wichita where she is helping tornado victims.

Stamm used a scanner to monitor the fire department dispatch frequencies in the 11-city Johnson County area for which his Red Cross chapter is responsible. The Red Cross provides aid to fire and disaster victims including food and water and financial help such as vouchers for hotels. "We have replaced refrigerators and even

whole mobile homes that were destroyed," he told us. As a secondary responsibility they provide aid to firefighters as well.

Unbeknownst to Stamm, Overland Park has an ordinance (PRM-807) that forbids citizens from having a "police monitor" in a vehicle. "Police monitor means any high frequency receiving set either permanently installed or portable, capable of receiving or intercepting any signal, message or communication sent out by any police radio station." The law provides that anyone wishing to operate a police monitor in a vehicle may apply for to the Chief of Police for permission.

Stamm loaned his scanner to a friend who placed it in the back of a van. Police pulled the van over because it was similar in appearance, we were told, to a van that was used in a robbery. The police found the scanner and confiscated it.

Stamm and his friend went before a judge. The friend pleaded no contest and paid a \$25 fine for violation of PRM-807.

"The judge told me that if I can get the police chief to give me a permit, I could get my scanner back," Stamm said. He applied and assisted others to apply for permits on the basis that the Red Cross needs to monitor Johnson County dispatch in performing its functions of aiding fire victims and the fire department itself.

But the Overland Park police chief has apparently never granted any permits. "He denied it saying that there is no 'community benefit demonstrated,'" Stamm said. "We wanted to work with them. But my one chance was shut."

Pager communications stopped

The Red Cross disaster team used a telephone tree to rapidly contact volunteers in case of emergency. The fire departments triggered the process by beeping a pager carried by a key volunteer. In other cases the volunteer would hear the fire dispatch on a scanner. Depending on the situation, the volunteer would then call the dispatch center to find out details and location of the fire, and then he or she would phone the others.

"Two weeks ago, the fire departments changed their policy," Stamm told us. "They no longer call our pager. They won't tell us why. They have treated a lot of our volunteers rudely on the

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phone. If you say you heard it on the scanner they hang up on you. Right now without a scanner we can't do anything."

Jim McCoy/W0LQV coordinates amateur communications for the Red Cross group. His reaction? "Instead of making criminals out of people with scanners, the public safety agencies should secure their own communications with encryption."

We asked Christian Stamm for his personal reaction to the events that have handicapped the volunteers' public service. "It makes you so sick," he said.

ADVISORY COMMITTEE RECOMMENDATIONS

The FCC *Industry Advisory Committee* (IAC) on WARC-92, after months of meetings and deliberations, filed its final report on April 30. This committee, in which ARRL participates as well as all major commercial spectrum users, is charged with recommending U.S. proposals and positions for this all-important world conference to take place in Spain next February.

IAC *Informal Working Group 1* (IWG-1) on HF matters worked largely on the issue of more spectrum for shortwave broadcasting. The international community has been working on better ways to assign HF broadcasting channels since 1948. More recent work has focused on using computers to make the process more rational and to reduce interference.

However, all these attempts have failed! "This failure stems primarily from the broadcasting requirements of ITU member countries having greatly exceeded the number of available channels in the allocated spectrum," the IWG said. Congestion in the HF bands has reached the point where effective use can only be made by the use of excessive transmitter power and multiple transmitters broadcasting the same program.

Changes in HF use

Since 1979, the total of world broadcasting on HF bands (excluding tropical zone bands) has increased from about 28,000 frequency hours daily to a present level of about 40,000 hours. The Soviet Union and the U.S., including FCC-licensed private shortwave stations, are the largest

users of HF broadcasting spectrum in the world. The 1979 WARC made available only 40% of the additional spectrum requested, and then mainly in bands above 10 MHz.

With its suspension of jamming U.S.-operated broadcasters such as *Voice of America* and *Radio Free Europe*, the USSR increased its in-band broadcasting by more than 1,300 frequency hours. There are numerous new USSR broadcasting transmitters at 20 kW, which apparently were used as jammers before 1989. "The conclusion reached by IWG-1 was that jamming has given way to another form of interference, i.e. increased interference to broadcasters by other broadcasters." This interference will complicate further attempts to improve HF frequency assignment practices.

Ending 40 m inconsistency

In expanding the HF spectrum available for broadcasting, the IWG-1 decided against intrusion into maritime, aeronautical or amateur bands and "...elimination of a long standing inconsistency between Regions at 7100-7300 kHz that does not fully satisfy the needs of either the broadcasting or the amateur service."

A previous IWG-1 report recommended that this inconsistency between Amateur Radio in Region 2 and broadcasting in Regions 1 and 3 be resolved by shifting the existing amateur allocation of 7000-7300 kHz downward by 50 kHz, to 6950-7250 kHz. The broadcasters would be sent upward to 7250-7750 kHz, thus providing exclusive worldwide allocations for each service.

The FCC proposed a different approach, to shift each service by 100 kHz, so the amateur worldwide allocation would be 6900-7200 kHz (with the mobile service retaining a secondary shared allocation of 6900-7000 kHz). Broadcasting would start at 7200 kHz. The Commission proposed a worldwide broadcasting allocation of 325 kHz, to an upper limit of 7525 kHz, which would be a new band in Region 2 and an expansion of the existing band by 125 kHz in Regions 1 and 3.

The IWG-1 participants' consensus was that the FCC's proposal for realigning these allocations "...represents a satisfactory compromise of non-government HF users" as long as there is reaccommodation of displaced fixed service users

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and as long as all services are adequately protected during transition.

The panel also examined the proposed conversion to SSB from DSB-AM for HF broadcasting. A 1986 *Voice of America* study concluded that there are more than 500 million shortwave receivers in the world, not including North America. Asia had the most with over 168 million. IWG-1 recommended that a priority be accorded to SSB stations operating in the proposed newly allocated bands.

Flumpits Frequencies

In previous issues we have described FPLMTS, the *Future Public Land Mobile Telecommunications System* under development within the ITU. FPLMTS (pronounced "Flumpits") would be an internationally-compatible super pocket phone and data communications system for indoor and outdoor use. Two of the IAC members strongly supporting FPLMTS are Apple Computer and cellular and two-way radio manufacturer Motorola. Apple is interested in FPLMTS as a way to manufacture radio data devices without the need to change frequencies and parameters for each country. Some 40% of Apple's sales are overseas.

Motorola and Apple asked the FCC to promote at WARC-92 a 10 MHz worldwide FPLMTS allocation at 1990-2000 MHz. Each country could adopt additional bands for FPLMTS but the 1990-2000 MHz portion would be common around the world.

"While such technologies as smart cards [ROM cards for programmable operation - ed.] and frequency-agile radios may offer a partial solution to non-universal frequency allocations," the companies said, "these approaches fall far short of permitting the user to move around with his telecommunications device or computer with telecommunications functions.

"Because FPLMTS is evolving as an inherently personal service, user convenience, weight, radio complexity and costs are factors which mitigate against the smart card approach. In addition, lack of a worldwide frequency approach can result in non-tariff barriers, preventing the use in some countries of the telecommunications or computing device altogether." The companies also stated that a common allocation is "almost certainly a prerequisite" to development of modulation,

coding and network standards.

Actual chances for adoption of the Motorola/Apple proposal by the U.S. delegation to the international conference are limited, we believe. There was no visible consensus within the relevant ad-hoc group, interim working group, or industry advisory committee all concerned with WARC-92 that there is any need for a band for international roaming FPLMTS or PCS. The FCC itself stated on the record it does not necessarily see a need for such an allocation. As if that were not enough, the band Motorola and Apple proposed for this purpose is used in the U.S. for electronic news gathering by TV broadcasters, who would object loudly to any loss of spectrum.

Satellite bands

In our last issue we reported the concern that ARRL and AMSAT have over possible changes to the 2.4 GHz spectrum, especially 2400-2450 MHz extensively used by OSCAR satellite downlinks. The FCC and the IAC have been trying to find frequency space for digital audio broadcasting, especially audio via satellite. Some proposals would place these new satellites at 2.4 GHz where amateurs as well as microwave ovens are authorized to operate. The IAC group concerned with that spectrum reported:

"The amateur community has advised...of their particular opposition to the use of the 2400-2410 MHz band for broadcasting because of ongoing and future use of this band for worldwide amateur satellite operations. If the potential for microwave oven interference is determined to exist in the 2400-2410 MHz band, it is believed that the amateur-satellite service can resolve difficulties caused by such interference via careful selection of antennas and antenna locations. It is not known to what degree sound broadcasting services would be affected by such interference, and what measures might be taken by the broadcasting services to mitigate such interference."

The group suggested that changes be made in lower bands around 1.5 GHz to accommodate the broadcasting satellites. But there is still a great spectrum of opinion as to whether, how or even if the FCC and the State Department will support satellite sound broadcasting in the domestic and international allocations.